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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MCDONALD, RODNEY GLENN

ART UNIT PAPER NUMBER

1753

DATE MAILED: 06/30/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/062,283

Applicant(s)

YANO, MASARU

Examiner

Rodney G. McDonald

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 16-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 14 and 15 is/are rejected.
- 7) ☐ Claim(s) 2-13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-15, drawn to a method of decreasing surface tension through sputter deposition, classified in class 204, subclass 192.12+.
- II. Claims 16-20, drawn to a method of directionally etching, classified in class 216, subclass 68.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different modes of operation in that one process requires sputter deposition while other process required directional etching.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Daniel Dawes on June 24, 2003 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-15. Affirmation of this election must be made by applicant in replying to this Office action. Claims 16-20 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Objections

Claims 3, 4, 6, 7, 9, 10, 12-14 are objected to because of the following informalities:

Claims 3, 6, 9, 12, line 2, the word "deposing" should be spelled "depositing".

Claims 4, 7, 10, 13, lines 1 and 2, the word "deposing" should be spelled "depositing".

Appropriate correction is required.

Claim 14, line 2, the word "poydimethylsilicone" should be spelled "polydimethylsilicone".

Claim Rejections - 35 USC § 112

Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 is indefinite because it is unclear what is meant by "(RTV)"?

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Takebe et al. (U.S. Pat. 5,906,871).

Takebe et al. teach forming **a first substance on a substrate of a second substance having a surface tension different from a surface tension of the first substance.** (See Abstract) The substrate can be at least one material selected from the group consisting of metal, glass, **plastic**, rock, ceramic and mineral. (Column 4 lines 51-62) **Examples of plastic material for the substrate include polyethylene, polypropylene, polystyrene, polycarbonate, poly(methyl methacrylate), poly(hydroxy ethyl methacrylate), acrylic resins, polyether sulfone, poly(vinyl chloride), poly(vinylidene chloride), rayon, cellulose resins, nylons, fluorine resins, silicon resins, and copolymer hereof such as acrylonitrile-butadiene-styrene (ABS) resin or acrylonitrile-styrene (AS) resin.** (Column 5 lines 1-10) (This is representative of the elastomeric material required by Applicant)

When the surface newly formed on the substrate is derived from a silane or thiol compound having an alkyl or fluoroalkyl group, the surface tension of the portion in the substrate covered with the other substance is reduced, generating sufficient difference in surface tension between the substrate and the portion. (Column 5 lines 60-65)

In the invention a surface for latent images is formed on part of a substrate in two ways, the masking method and the direct method. (Column 8 lines 16-18)

In the masking method, **a substrate is masked with another substance, a spot or film is formed of a third substance on an unmasked portion of the substrate and then the masking substance is removed.** Examples of the masking

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substance including printing ink, **photoresist film** and plastic film having a hole.

(Column 8 lines 19-24)

The third substance adheres to a surface in different ways depending on the surface tension of the surfaces. **Then, irradiation of appropriate developing ray visualizes the third substance enough to display the latent images.** Examples of the developing ray include visible light, infrared ray, ultraviolet ray, electron beam and laser beam. (Column 8 lines 45-52)

In Figure 1 drops 13 adhered to a film 12 and glass substrate 11. The substrate was irradiated with visible light as the developing ray. (Column 9 lines 45-47)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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Claims 1, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takebe et al. (U.S. Pat. 5,906,871).

Takebe et al. is discussed above and all is as applies above. (See Takebe et al. discussed above)

The differences between Takebe et al. and the present claims is the use of polydimethylsilicone elastomer and vulcanizable (RTV) silicone elastomer

Takebe et al. disclose utilizing elastomeric substrates of plastic. Polydimethylsilicone elastomer and vulcanizable (RTV) silicone elastomer fall within this genus and has similar properties of the plastics in this genus. (See Takebe et al. discussed above)

The motivation for utilizing polydimethylsilicone elastomer and vulcanizable (RTV) silicone elastomer is that it allows for providing a substrate for images that are free from deterioration over time. (Column 1 lines 38-43)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Takebe et al. by utilizing a vulcanizable (RTV) silicone elastomer as taught by Takebe et al. because it allows for providing a substrate for images that are free from deterioration over time.

Allowable Subject Matter

Claims 2-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 2-13 are indicated as being allowable over the prior art of record because the prior art of record does not teach utilizing silicon dioxide, silicon nitride or silicon as the tension reducing film layer. While Takebe et al. recognize utilizing a layer containing silicon Takebe et al. require that the coating be **silane compound** layer to reduce surface tension which does not lead one to choose silicon dioxide, silicon nitride or silicon as the layer of material. Takebe et al. is also silent in teaching the sputtering method to produce the layer.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 703-308-3807. The examiner can normally be reached on M- Th with Every other Friday off..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 703-308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9310 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Rodney G. McDonald
Primary Examiner
Art Unit 1753

RM
June 25, 2003